

Examiner has indicated that the requests to hold the double patenting rejections over now allowed Application Serial No. 09/549,949 ("the '949 Application") are not sufficient without more. Accordingly, in complete response to the May 31, 2002 Official Communication, Applicants herein provide the following remarks regarding the double patenting rejections. This Reply supplements the October 16, 2002 Amendment and Reply. Thus, Applicants request that the Examiner enter, make of record, and consider the arguments set forth in the October 16, 2002 Amendment and Reply.

**I. DOUBLE PATENTING**

**A. Statutory Double Patenting**

Claim 1 stands rejected under 35 U.S.C. § 101, as allegedly claiming the same invention as claim 1 of the '949 Application. See Official Action, page 2. Applicants respectfully traverse this rejection for at least the following reasons.

The statutory double patenting rejection of claim 1 under 35 U.S.C. § 101 is in error because the invention of claim 1 of the instant application is patentably distinct from the invention of claim 1 of the '949 Application. In particular, the instant invention contains subject matter not present in the invention of claim 1 of '949 Application.

It is well established that statutory double patenting rejections are solely reserved for situations where two applications (or an application and a patent) claim the same subject matter. In this regard, the claims of one application must teach each and every element of the claims of the other application.

In this case, the instant invention is essentially different from the invention of claim 1 of the '949 Application for at least the following two reasons. First, the method of claim 1 of the '949 Application is a method for cleaving a double stranded (ds) DNA. In contrast, the method of the instant invention of claim 1 is a method of ligating a ds DNA and another ds DNA. Second, the invention of claim 1 of the '949 Application requires a nuclease having the activity of cleaving a phosphodiester bond of the ds DNA. By contrast, the method of claim 1 of the instant invention does not require any such nuclease.

Thus, claim 1 of the '949 Application fails to teach each and every element of claim 1 of the instant invention. Accordingly, the invention of claim 1 is not the same as the invention of claim 1 of the '949 Application. Therefore, Applicants respectfully request that the statutory double patenting rejection be withdrawn.

**B. Non-statutory, Obviousness-type Double Patenting Rejection**

Claims 2-9 stand rejected under the judicially created doctrine of obviousness-type double patenting, as allegedly being unpatentable over claims 1-11 of the '949 Application in view of Ferrin *et al.*, WO 97/04111. See Official Action, page 2. Applicants respectfully traverse this rejection for at least the following reasons.

The obviousness-type double patenting rejection of claims 2-9 is in error. The invention of claims 2-9 of the instant application is patentably distinct over claims 1-11 of the '949 Application in view of Ferrin. In particular, the instant invention contains subject matter neither present in claims 1-11 of the '949 Application nor suggested by Ferrin.

As to the '949 Application, the invention of the instant application is patentably distinct from the claimed invention of the '949 Application. As discussed above, the claims of the '949 Application are directed to a method for cleaving a double stranded (ds) DNA. By contrast, the method of the instant invention is a method of ligating a ds DNA and another ds DNA. In addition, the invention of the '949 Application requires a nuclease having the activity of cleaving a phosphodiester bond of the ds DNA, whereas the method of the instant invention does not require any such nuclease.

Ferrin fails to remedy these deficiencies. Instead, Ferrin discloses a method for selectively cloning a DNA fragment of interest using a homologous recombination protein. Ferrin further discloses that during such cloning, a three-stranded DNA is formed in the presence of the homologous recombination protein.

In fact, the teachings in Ferrin are very different from the present invention. In the present invention, the homologous recombinant protein acts on the two DNA ends that are to be ligated, and the homologous recombination protein is used during DNA ligation to maintain or stabilize the triplex. In contrast, the homologous recombination protein in Ferrin acts on the end of the DNA of interest that is to be cloned, and the homologous recombination protein is used with the purpose of protecting the protruding structure (*i.e.*, the cohesive end) of the single stranded DNA at the end of the DNA of interest.

Since the homologous recombination protein is used differently in the present invention when compared to Ferrin, the DNA forming the triplex in the presence of the homologous recombination protein is also different. In particular, the three-stranded

structure in Ferrin is formed when one of the two DNA ends that are ligated to an oligonucleotide. On the other hand, the three-stranded structure in the instant invention is formed when two DNA ends of the double-stranded DNA molecules (not an oligonucleotide) are ligated. Applicants direct the Examiner to Figure 1 of the present application and to page 3, lines 15-22 of Ferrin.

Another difference between the claimed invention and the teaching in Ferrin is that the two DNA ends ligated in Ferrin are both single-stranded ends, whereas in the present invention, one is a single-stranded end, and the other is a double-stranded blunt end.

Thus, Ferrin differs from the present invention in: (1) the way the homologous recombination protein is used; (2) the location on the DNA where the homologous recombination protein acts to form the triplex; and (3) the structure of the two DNA ends that are ligated.

Thus, since the instant invention contains subject matter neither present in claims 1-11 of the '949 Application nor suggested by Ferrin, Applicants respectfully request the withdrawal of this rejection.

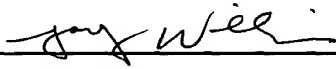
### **CONCLUSION**

From the foregoing, further and favorable action in the form of a Notice of Allowance is respectfully requested and such action is earnestly solicited.

In the event that there are any questions concerning this amendment or the application in general, the Examiner is respectfully requested to telephone the undersigned so that prosecution of the application may be expedited.

Respectfully submitted,

BURNS, DOANE, SWECKER & MATHIS, L.L.P.

By:   
Jay F. Williams  
Registration No. 48,036

P.O. Box 1404  
Alexandria, Virginia 22313-1404  
(703) 836-6620

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